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Pentagon Fears Delays On Future Spy Satellites

WASHINGTON, Feb. 23 — The destruction of the space shuttle Challenger has left the Pentagon uncertain about its ability to maintain and upgrade military satellites that monitor Soviet military actions and control United States nuclear forces.

Because United States satellites have a record of good reliability and much longer service life than the Soviet models, no immediate crisis is foreseen, Pentagon officials said last week.

Serious problems could arise, however, if what caused the disaster cannot be corrected quickly enough to resume an ambitious schedule of six launchings a year for each of the remaining three space shuttles.

With a delay of a only few months, the Defense Department could use its priority on shuttle flights to get "the most critical payloads" into space over two and a half years, according to the officials, who declined to be identified.

Scheduling Problems Seen

However, experts in rocket design say it is improbable that they will be able to correct within a year the problems that have already been identified in the design of the shuttle's solid-fuel rocket boosters. If the shuttles do not fly again for a year or two, serious problems would arise in the scheduling of military satellite launchings. Contingency plans for such a long delay are uncertain.

Similar problems are faced by other major users of the shuttles. Scientists in charge of planetary and solar missions that were to have been launched in May have no choice but to wait until the shuttles are ready again, because their craft are too large to be launched by regular rockets. The satellite communications industry, the primary commercial user of shuttle services, may be forced to shift more of its business to the European Space Agency.

If the shuttles are grounded for more than a year, science and commerce would suffer because, with the production of ordinary expendable rockets being phased out and the number of them available limited, there would be few opportunities to deliver payloads into orbit.

First Will Arrive in 1988

The Air Force, which is the Defense Department's executive agency for satellite launchings, has ordered 10 single-use, expendable rockets, which could do most of the satellite-launching work of the shuttles, but it will not receive the first of those until late 1988. The National Aeronautics and Space Administration has said it would require three to four years to build a new shuttle to replace the Challenger, whose destruction killed seven astronauts.

According to Pentagon experts, Edward C. Aldridge, Under Secretary of the Air Force, and other officials have concluded that a program of accelerated expenditures could not significantly speed those delivery dates.

One short-term concern has already materialized. The Pentagon prefers to have two KH-11 photographic reconnaissance satellites in polar orbit passing over the Soviet Union several times each day. But one was destroyed Aug. 28 when a Titan rocket carrying it blew up after launching at Vandenberg Air Force Base.

John E. Pike, space analyst for the Federation of American Scientists, said he believed this left just one of these satellites in operation. A Pentagon official said that after an investigation the Titan rockets were declared ready for future launchings but only seven remained available for use.

Mr. Pike and other space experts also said they believed an improved photo reconnaissance satellite for orbit over the Earth's poles, KH-12, scheduled to be launched this year on a shuttle, might not be suitable for launching on an expendable rocket.

The KH-12 is said to have the ability to detect objects on the ground that are less than six inches across. On command from the ground it can swoop to a lower orbit to make observations, and the planned fleet of four satellites will be able to cover any designated area within 20 minutes of receiving an order, according to a private group, the Center for Defense Information.

KH-11 satellites are believed to have a useful life of about three years. The last one was launched in December 1984, experts said.

Another critical military system is the Defense Satellite Communication System. These satellites tie together United States strategic nuclear forces and conventional military forces. One new satellite of this kind was put in a high orbit last year on a military shuttle mission, and two more are to be sent up this summer on a Titan rocket from Cape Canaveral, Fla.

Loss Appears to Be Larger

These launchings will "tide the Pentagon over" for the short term, Mr. Pike said. But he and Government officials expressed concern lest shuttle flights not be resumed soon. An improved and heavier model of the communications satellite would best be launched in pairs from a shuttle.

One nagging problem is that the Challenger was one of only two of the space shuttles — the other is the Atlantis — equipped to carry a Centaur upper rocket stage that can lift heavy loads from the low orbit of the shuttle to 23,000-mile-high orbits needed to maintain constant surveillance of the Soviet Union. The Challenger disaster, therefore, cut this United States capacity not by 25 percent but by 50 percent, an official said.

A long-term suspension of shuttle flights would also affect experiments for the Reagan Administration's plan for a space-based defense against missiles, experts said.

A major program is under way to improve the command, control, communications and intelligence system that informs United States officials of Soviet actions and ties together space sensors and nuclear weapons launching centers. The upgrading includes improved replacements for the three Defense Support Satellites that hover over certain points on the Earth's surface; they use infrared sensors to give notice of any Soviet missile launchings, including test flights.

Role of Satellites in War

Satellites have become so important to the United States that Richard N. Perle, Assistant Secretary of Defense for international security policy, told Congress recently that a non-nuclear war in Europe could not be conducted effectively without satellite communications.

The problem facing military planners is that just seven of the Titan rockets are left. This had been believed to be adequate until the 10 improved expendable rockets begin arriving. But that assumed an uninterrupted schedule of 24 annual launchings by four shuttles. Besides, some officials say that even the new models will not be able to carry some of the heavier military payloads now planned.

None of this is necessarily disastrous if shuttle flights can be resumed, but the Air Force has no predictions on this.

"It shows that we were right when we told Congress last year that the country needs a robust space launch capability that does not depend on a single launch vehicle," an Pentagon official said.